ALEXANDRE CARMINOT

Engineering Student - Machine Learning & Medical Engineering

+33 6 76 89 52 95 @ alexandre.carminot@outlook.com

EDUCATION

Master - Medical Engineering 09/2019 - Present
EPF Engineering School Paris Expected Graduation in 2025

- Engineering curriculum with a healthcare specialization: integrating core engineering principles, mathematics, programming, and machine learning with medical technology, device design, and healthcare informatics.

Computer Science - Exchange Program 09/2024 - Present
Tianjin University

- Focus on Algorithmic programming, machine learning , computer vision, and applied data science

Intelligent Medical Engineering - Exchange Program 09/2023 - 01/2024
Tianjin University

- Specialized in Precision medicine, neurosciences, brain-computer interfaces (BCI), medical imaging basics, and fundamentals of medical engineering.

SPECIALIZATION COURSES

Deep Learning and Advanced TensorFlow
DeepLearning.AI

Advanced Machine Learning on Google Cloud
Google

Advanced Medical Neuroscience
Duke University

Machine Learning Specialization
Stanford University & DeepLearning.AI

PROJECTS

Deep Neural Network Framework - Python [GitHub Link] 10/2024-Present
Built a deep neural network framework from the ground up, incorporating activation functions (Sigmoid, ReLU, Swish, Softmax), dropout, and flexible hyperparameters.

- Engineered versatile configurations for multi-layer networks, efficient backpropagation, and flexible loss functions (MSE, MAE, Cross-Entropy).
- Enables robust performance across classification and regression tasks,

BCI Workshop - MATLAB,C++ [GitHub Link] 09/2023 - 10/2023
Led a team to develop a real-time hand gesture recognition & reproduction system achieving 98% accuracy using:

- Custom pattern recognition algorithms processing flexion sensor data
- Real-time classification of 6 distinct hand gestures (static & dynamic)
- Implemented signal processing pipeline for noise reduction and feature extraction

Disease Prediction Algorithm - Python [GitHub Link] 07/2024 - 09/2024
Developed a medical diagnostic tool that predicts 41 diseases from 131 symptoms with 96% accuracy, using a multi-layer neural network built with numpy.

- Developed multi-layer neural network with dynamic layer configuration, dropout rate and backpropagation for maximized F1-score and minimized overfitting using numpy.
- Enhanced model robustness by benchmarking against an optuna-tuned ensemble (XGBoost, SVM & ReLU) with cross-validation (84% to 96% with the ensemble model).
- Designed a user-friendly UI, facilitating real-time symptom input and diagnosis.

EXPERIENCE

AI Model Review Specialist 01/2024 - Present
Outlier.AI | Remote | Current

- Assess scientific, mathematical and code reasoning in AI responses, validating complex algorithms and technical explanations to enhance model precision and reliability.

Private Tutor and Esports Coach 06/2022 - 09/2023

- Led personalized tutoring sessions in Math and Physics for 10 students, strengthening foundational skills and boosting student confidence in subject mastery.
- Customized tutoring and coaching strategies to suit individual skill levels, resulting in improved student performance

Internship 06/2022 - 9/2022
Zen2050Maintenant Paris

- Developed and orchestrated interactive exhibition stands for Zen2050's annual event, creating eco-conscious games, climate-themed art, and educational activities that engaged visitors in sustainability initiatives.

ABOUT ME

As a student of engineering and medicine, my journey is rooted in the intersection of these fields.
Focusing on machine learning and medical engineering, I am dedicated to exploring neuroscience and artificial intelligence.
This path has led me into brain-computer interfaces and neuro-engineering, where I develop AI-driven solutions bridging technology and human capability.

FIND ME ONLINE

Alexandre CARMINOT [Link]

My Portfolio [Link]
My Projects [Link]

Alexandre CARMINOT [Link]

SKILLS

Programming

Python - C++ - Java - Docker - Git

MATLAB - HTML, CSS & JavaScript

Libraries

TensorFlow - Keras - MNE - PyTorch

Scikit - Seaborn - SciPy

ML/AI

Machine Learning - Deep Learning

DNN - CNN - NLP - LSTM - C.Vision

Engineering Skills

Problem Solving - Innovation - Analysis

Critical thinking - Device design

LANGUAGES

French Native, Voltaire Certification

English Expert, TOEIC (980/990)

Spanish Intermediate, B1

Chinese Elementrary, HSK3

PASSIONS

- Martial Arts: Taekwondo (Red Belt), Judo (Brown Belt)
- Team sports: Rugby & Soccer
- Music: Piano (Playing for seven years)
- Science: Astronomy, Cosmology, Archaeology